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FOX ROTHSCHILD LLP 997 Lenox Drive, Bldg. #3 Lawrenceville, NJ 08648			EXAMINER CUTLIFF, YATE KAI RENE	
			ART UNIT 1621	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocket@foxrothschild.com

### Office Action Summary

**Application No.**

10/599,682

**Applicant(s)**

ISSBERNER ET AL.

**Examiner**

YATE' K. CUTLIFF

**Art Unit**

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/19/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3 - 5 & 11 - 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3 - 5 & 11 - 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/22)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

**DETAILED ACTION**

***Status of Claims***

1. Claims 3 – 5 and 11 - 24 are pending.  
Claims 1, 2 and 6 - 10 have been canceled  
Claims 3 – 5 and 11 - 24 are rejected.

***Response to Amendment***

2. The amendment to claims 3 - 5, 11 - 14, 16, 18, 20 and 21, and new claims 22 - 24, submitted October 19, 2009 is acknowledged and entered.

***Response to Arguments***

3. Applicant's arguments, see page 6, filed October 19, 2009, with respect to 35 USC 112 first paragraph rejections of claims 3 – 5 and 11 - 21 have been fully considered and are persuasive in view of the amendment to the claims. The 35 USC 112 first paragraph rejections of claims 3 – 5 and 11 – 21 have been withdrawn.
4. Applicant's arguments, see pages 6 - 7, filed October 19, 2009, with respect to the rejection(s) of claim(s) 3 under 35 USC 103(a) have been fully considered and are persuasive in view of the amendment to the claim. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Linder (US 4,332,702) and Sakurai et al. (US 4,113,635) as set out below.
5. Applicant's arguments, see page 8, filed October 19, 2009, with respect to the rejection(s) of claim(s) 4 under 35 USC 103(a) have been fully considered and are persuasive in view of the amendment to the claim. Therefore, the rejection has been

withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Linder (US 4,332,702) and Sakurai et al. (US 4,113,635) as set out below.

6. Applicant's arguments filed October 19, 2009, with regard to the rejection(s) of claim(s) 5 under 35 USC 103(a) have been fully considered but they are not persuasive, for the reasons set out in the Office Action of mailed June 17, 2009 and a set out below.

7. Applicant's arguments, see pages 9 - 11, filed October 19, 2009, with respect to the rejection(s) of claim(s) 11 - 20 under 35 USC 103(a) have been fully considered and are persuasive in view of the amendment to the claim. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Barth et al. (US 2,441,555), Memita et al. (US 6,939,980; WO 2002/22548), Scheuffgen (US 4,868,220), Plough, Inc. (EP 0179416), Bauer et al. (WO 2003/028690A; 2004/0258721), Sakurai et al. (US 4,113,635) and Kirk-Othmer (Wiley-Interscience, 1993, vol. 10, 4<sup>th</sup> ed. page 267), as set out below.

8. Applicant's arguments filed October 19, 2009, with regard to the rejection(s) of claim(s) 21 under 35 USC 102(b) have been fully considered in view of the amendment to the claim. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sakurai et al. (US 4,113,635) and Kirk-Othmer (Wiley-Interscience, 1993, vol. 10, 4<sup>th</sup> ed. Page 267), as set out below.

***Declaration Under 37 C.F.R 1.132***

9. The Declaration of Helga Gondek under 37 CFR 1.132 filed October 19, 2009 is insufficient to overcome the rejection of claims 11 - 20 based upon Plough reference as

set forth in the last Office Action and as set out below, because: Applicant only compared their claimed pentaerythritol ester mixture of C18 and C16 to a pentaerythritol ester of C22 of Plough. Applicant's claimed invention of claims 11 - 20 is not limited to partial esters of pentaerythritol, i.e. mono, di, or triesters, but, can include tetraesters. Plough teaches the use of fatty acids of C20 to C24. Further, Applicant's claim ester is not limited to ester mixture with C16 and C18 fatty acids but, includes the range of esters of fatty acids from C6 to C22, which overlaps with the fatty acids of Plough. As, such the comparison provided in the Declaration does not demonstrate that there would be instability of an emulsion within the overlapping fatty acid ranges of their claimed invention and the pentaerythritol esters of Plough. Furthermore, the comparison with Plough is not a comparison with the closest prior art. In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 3 – 5 and 11 – 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The MPEP states that the proscription against the introduction of new matter in a patent application (35 U.S.C. 132 and 251) serves to prevent an applicant from adding information that goes beyond the subject matter originally filed. See *In re Rasmussen*, 650 F.2d 1212, 1214, 211 USPQ 323, 326 (CCPA 1981). Further, that the written description requirement prevents an applicant from claiming subject matter that was not adequately described in the specification as filed. New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement. See, e.g., *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971) (subgenus range was not supported by generic disclosure and specific example within the subgenus range); *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) (a subgenus is not necessarily described by a genus encompassing it and a species upon which it reads). The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., *Vas-Cath, Inc.*, 935 F.2d at 1563-64, 19 USPQ2d at 1117.

12. Claims 3 - 5, 11 and 21 include the phrase "esters containing C17 fatty acid acyl groups". Applicant does not point to a place in the Specification where support is found for this new limitation. Applicant only states that additional claim amendments have been made for clarity.

13. However, Examiner's review of the Specification did not find support for this limitation of "C17 esters". For this reason, Examiner concludes that this terminology is

new matter that broadens the claims beyond the scope of the Application as originally filed.

14. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The MPEP states that the proscription against the introduction of new matter in a patent application (35 U.S.C. 132 and 251) serves to prevent an applicant from adding information that goes beyond the subject matter originally filed. See *In re Rasmussen*, 650 F.2d 1212, 1214, 211 USPQ 323, 326 (CCPA 1981). Further, that the written description requirement prevents an applicant from claiming subject matter that was not adequately described in the specification as filed. New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement. See, e.g., *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971) (subgenus range was not supported by generic disclosure and specific example within the subgenus range); *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) (a subgenus is not necessarily described by a genus encompassing it and a species upon which it reads). The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that,

as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., *Vas-Cath, Inc.*, 935 F.2d at 1563-64, 19 USPQ2d at 1117.

15. Claim 21, as amended includes the phrase "predominantly unbranched" in line 2 of the claim. Applicant directed the Examiner to page 3, lines 22-26 of the Specification for support of this language. However, while the Specification discloses the inclusion of "a large content of unbranched" fatty acids, there is no specific teaching of a percentage or range of fatty acids in the ester. The use of the term "predominant" is a relative term which implies a greater amount of one type of fatty acid over another. A review of the Specification does not provide any standard of measuring the amount of one type fatty acid versus another type in relation to the fatty acid being branched or unbranched. For this reason, Examiner concludes that this terminology is new matter that broadens the claims beyond the scope of the Application as originally filed.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.



4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linder (US 4,332,702) in view of Sakurai et al. (US 4,113,635).

20. The rejected claim covers a fatty acid ester mixture of pentaerythritol, wherein the fatty acid component is a mixture containing from about 40% to about 50% by weight of a C16 fatty acid and from about 45% to about 55% by weight of a C18 fatty acid, and wherein said ester contains less than 0.3% by weight of ester containing C17 fatty acid acyl groups, and has a melting point of at least 30°C.

Applicant is reminded that during patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive

Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). The phrase "contains less than" as applied to C17 fatty acid acyl groups has been interpreted to denote "0 up to 0.3%" C17 fatty acid acyl group. As such, since the claimed fatty acid ester of pentaerythritol can be free of C17 fatty acid acyl groups the claim is anticipated by the Lindner reference. Further, the phrase "has a melting point of at least 30°C" as applied to the fatty acid ester mixture, has been interpreted to denote that this is the start temperature at which the fatty acid ester mixture may begin melting. (see National Research Development Corporation v. Great Lakes Carbon Corporation, et al., 188 USPQ 327 (D. Del. 1975), 410 F. Supp 1108; "At least" one thousand degrees in claim means minimum temperature of one thousand degrees"). Thus, fatty acid ester mixture with a melting temperature above 30°C would fall within the scope of the claim.

21. Lindner discloses a partial ester of pentaerythritol, in column 2, lines 13-20 wherein the fatty acid components overlap with Applicant's claimed fatty acid range. Further, Lindner states that these esters are known to be useful as lubricants. (see column 2, lines 8-9).

22. The difference between Lindner and Applicant's claimed ester is: the fatty acid ester mixture having a melting point of at least 30°C.

23. However, Sakurai et al. discloses lubricant compositions of a solid film type, with partial esters of pentaerythritol with fatty acids as the chief constituents, rust-preventative, lubrication-improving agents, surface active agents, etc., having melting points of 30 to 60°C. (see column 1, lines 11-23). Also, it is stated that most of the

partial esters of pentaerythritol of a fatty acid have melting points of less than 60°C. (see column 3, lines 26-27).

In this instance the temperature of "at least 30°C" has been interpreted to mean the minimum melting temperature, which means that the mixture could melt at a temperature above 30°C. The Sakurai et al. reference teaches that it was known in the art at the time of Applicant's claimed invention that partial esters of pentaerythritol of fatty acids have melting points of less than 60°C. As such, based on the claim as interpreted above, Sakurai's melt temperatures overlaps with any of Applicant's claimed ester mixtures having melting points above 30°C. Thus, based on Sakurai et al. Applicant's claimed temperature range is a known property of partial esters of pentaerythritol with fatty acid acyl groups within Applicant's claimed carbon atom number. Since Applicant is claiming compounds that overlap with the suggested esters of Sakurai et al., one having ordinary skill in the art would expect that the melting point of Applicant's claimed esters would be within the same ranges as set out in Sakurai et al. An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties. (In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991)).

One having ordinary skill in the art at the time Applicant's invention was made when viewing the partial ester pentaerythritol of Linder, based on the fact that Sakurai et

al. teaches that partial esters of pentaerythritol with fatty acids have melting points of 30°C, would have a reasonable expectation that the Linder partial esters would have the same characteristics as Applicant's claimed esters.

24. Claims 4 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linder (US 4,332,702) in view of Sakurai et al. (US 4,113,635).

25. The rejected claim covers a fatty acid ester mixture of pentaerythritol, wherein the fatty acid component has 6 to 22 carbon atoms, and wherein said ester mixture contains less than 0.3% by weight of ester containing C17 fatty acid acyl groups, and has a melting point of at least 30°C with a percentage content of (a) from about 10% to about 25% by weight monoesters, (b) from about 25% to about 40% by weight diesters, and (c) from about 30% to about 45% by weight triesters. Dependent claim 22 further limits the fatty acid mixture.

Applicant is reminded that during patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). The phrase "contains less than" as applied to C17 fatty acid acyl groups has been interpreted to denote "0 up to 0.3%" C17 fatty acid acyl groups. As such, since the

claimed fatty acid ester of pentaerythritol can be free of C17 fatty acid acyl groups the claim is anticipated by the reference. Further, the phrase "has a melting point of at least 30°C" as applied to the fatty acid ester mixture, has been interpreted to denote that this is the start temperature at which the fatty acid ester mixture may begin melting. (see *National Research Development Corporation v. Great Lakes Carbon Corporation*, et al., 188 USPQ 327 (D. Del. 1975), 410 F. Supp 1108; "At least" one thousand degrees in claim means minimum temperature of one thousand degrees"). Thus, fatty acid ester mixture with a melting temperature above 30°C would fall within the scope of the claim.

26. Lindner discloses an ester of pentaerythritol, in column 2, lines 21-25 wherein the mixture has a percentage content of monoester, diester and triester overlap with Applicant's claimed ester content.

27. The difference between Lindner and Applicant's claimed ester is: the fatty acid ester mixture having a melting point of at least 30°C.

28. However, Sakurai et al. discloses lubricant compositions of a solid film type, with partial esters of pentaerythritol with fatty acids as the chief constituents, rust-preventative, lubrication-improving agents, surface active agents, etc., having melting points of 30 to 60°C. (see column 1, lines 11-23). Also, it is stated that most of the partial esters of pentaerythritol of a fatty acid have melting points of less than 60°C. (see column 3, lines 26-27). Further, the fatty acid component in the esters of Sakurai et al. have carbon atoms in the fatty acid acyl group ranging from C10 to C20, which overlaps with the number of carbon atoms in fatty acid acyl groups of Applicant's claimed esters.

In this instance the temperature of "at least 30°C" has been interpreted to mean the minimum melting temperature, which means that the mixture could melt at a temperature above 30°C. Sakurai et al. reference teaches that it was known in the art at the time of Applicant's claimed invention that partial esters of pentaerythritol of fatty acids have melting points of less than 60°C. As such, based on the claim as interpreted above, Sakurai's melt temperatures overlaps with any of Applicant's claimed ester mixtures having melting points above 30°C. Thus, based on Sakurai et al. Applicant's claimed temperature range is a known property of partial esters of pentaerythritol with fatty acid acyl groups within Applicant's claimed carbon atom number. Since Applicant is claiming compounds that overlap with the suggested esters of Sakurai et al., one having ordinary skill in the art would expect that the melting point of Applicant's claimed esters would be within the same ranges as set out in Sakurai et al. An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties. (In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991)).

All references above teach Applicant's claimed fatty acid ester mixture of pentaerythritol. Linder teaches the embodiment of the claimed ester mixture, and Sakurai et al. discloses that partial esters of pentaerythritol of fatty acids, having

Applicant's fatty acid acyl groups have melting points within Applicant's claimed range and the esters with the suggestion that they would be suitable for use as a lubricant.

One having ordinary skill in the art at the time Applicant's invention was made when viewing the partial ester pentaerythritol of Linder, based on the fact that Sakurai et al. teaches that partial esters of pentaerythritol with fatty acids have melting points of 30°C, would have a reasonable expectation that the Linder partial esters would have the same characteristics as Applicant's claimed esters.

#### **Response to Arguments regarding Claims 3 and 4**

29. With regard to both claims 3 and 4, Applicant asserts that the claims do not teach the utility of the fatty acid esters as being cosmetic.

30. However, in response Examiner states that this feature is not a claimed feature. The claims are solely directed to the claimed fatty acid ester mixtures of pentaerythritol. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., cosmetic utility) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

31. Claims 5 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. (US 4,113,635) and further in view of Knothe et al. (American Chemical

Society, 1997), for the reasons set out in the Office Action mailed June 17, 2009 and as set out below.

32. The rejected claim covers a fatty acid ester mixture of pentaerythritol, wherein the fatty acid component has 6 to 22 carbon atoms, and wherein said ester mixture contains less than 0.3% by weight of esters containing C17 fatty acid acyl groups, and has a melting point of at least 30°C with a percentage content of (a) from about 12% to about 19% by weight monoesters, (b) from about 25% to about 35% by weight diesters, (c) from about 30% to about 40% by weight triesters, and (d) from about 6 to about 11% by weight tetraesters. Dependent claim 23 further limits the fatty acid ester mixture.

Applicant is reminded that during patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. Sunrize Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). The phrase "contains less than" as applied to C17 fatty acid acyl groups has been interpreted to denote "0 up to 0.3%" C17 fatty acid acyl groups. As such, since the claimed fatty acid ester of pentaerythritol can be free of C17 fatty acid acyl groups the claim is anticipated by the Lindner reference. Further, the phrase "has a melting point of at least 30°C" as applied to the fatty acid ester mixture, has been interpreted to denote that this is the start temperature at which the fatty acid ester mixture may begin



melting. (see National Research Development Corporation v. Great Lakes Carbon Corporation, et al., 188 USPQ 327 (D. Del. 1975), 410 F. Supp 1108; "At least" one thousand degrees in claim means minimum temperature of one thousand degrees"). Thus, fatty acid ester mixture with a melting temperature above 30°C would fall within the scope of the claim.

33. Sakurai et al. discloses lubricant compositions of a solid film type, with partial esters of pentaerythritol with fatty acids as the chief constituents, rust-preventative, lubrication-improving agents, surface active agents, etc., having melting points of 30 to 60°C. (see column 1, lines 11-23). The fatty acids used to produce the corresponding partial esters by the reaction with pentaerythritol are from animal oil, vegetable oils, and straight chain fatty acids i.e. capric (C10), undecanoic (C11), lauric (C12), myristic (C14), palmitic (C16), stearic (C18) and olefinic fatty acids. (see column 3, lines 40-51). Also, it is stated that most of the partial esters of pentaerythritol of a fatty acid have melting points of less than 60°C. (see column 3, lines 26-27). Example 3 discloses pentaerythritol esters that are 20% monoester, 30% diester, 40% triester and 10% tetraester. According to the results in Table 3 the lubricant of Example 3 exhibited satisfactory results for Applicant's intended purpose. The ranges in Examples 3 overlap Applicant's claimed ranges for the diester, triester and tetraester, and are close to the monoester range.

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257,

191 USPQ 90 (CCPA 1976). In this instance the fatty acid component of the prior art encompasses the fatty acid content of Applicant's claimed mixture.

34. Further, difference between Applicant's claimed invention and Sakurai et al. is that it does not disclose that the fatty acid is a mixture of fatty acids.

35. However, the esters of Sakurai et al. in Example 3 are produced from beef tallow. According to the teachings of Knothe et al., which provides an analysis of a variety of natural oils and their fatty acid composition, discloses in Table II on page 179 that the fatty acid composition of beef tallow is generally 3 – 6% C14, 25 to 37% C16 fatty acid and about 14 to 52% C18:0 fatty acid. Based on this fact one of ordinary skill in the art at the time of Applicant's claimed invention would expect that since the esters of Sakurai et al. are made from beef tallow then they would be expected to have a fatty acid composition similar to the beef tallow disclosed by Knothe et al; this limitation is deemed to be obvious absent a showing of unexpected results.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In reOpprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989).

36. Further, the difference between Sakurai et al. and the claimed inventions is that it does not teach the invention with particularity so as to amount to anticipation (See M.P.E.P. § 2131: "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by

the claim, but this is not an *ipse dixit* test, i.e., identity of terminology is not required. In *re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)).

However, based on the above, *Sakurai et al* teaches the elements of the claimed invention with sufficient guidance, particularity, and with a reasonable expectation of success, that the invention would be *prima facie* obvious to one of ordinary skill in the art. (see M.P.E.P. § 2143).

37. Lastly, It is well established that consideration of a reference is not limited to the preferred embodiment or working examples, but extends to the entire disclosure for what it fairly teaches, when viewed in light of the admitted knowledge in the art, to person of ordinary skill in the art. (in *re Boe*, 355 F.2d 961, 148 USPQ 507, 510 (CCPA 1966); In *re Lamberti*, 545 F.2d 747, 750, 192 USPQ 279, 280 (CCPA 1976); In *re Fracalossi*, 681 F.2d 792, 794, 215 USPQ 569, 570 (CCPA 1982); In *re Kaslow*, 707, F.2d 1366, 1374, 217 USPQ 1089, 1095 (Fed. Cir. 1983)).

#### **Response to arguments regarding claim 5**

38. Applicant respectfully asserts that the Composition of Example 6 of *Sakurai* discloses a pentaerythritol mixture that was not satisfactory.

39. In response, Examiner notes that Example 6 does not disclose an ester with a monoester, diester, triester and tetraester. For this reason the Examiner did not previously cite this Example. The facts of Example 6, that it was not useful as a lubricant in the formation of steel plates in a press, do not detract from the teaching of the remainder of the reference. In presenting this argument, it would appear that Applicant is asserting that the reference teaches away from their invention. However,

"the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." (In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004)).

40. Claims 11- 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barth et al. (US 2,441,555), in view of Memita et al. (US 6,939,980; WO 2002/22548)), in view of Scheuffgen (US 4,868,220), in view of Plough, Inc. (EP 0179416), in view of Bauer et al. (WO 2003/028690A; 2004/0258721), in view of Sakurai et al. (US 4,113,635) and further in view of Kirk-Othmer (Wiley-Interscience, 1993, vol. 10, 4<sup>th</sup> ed. page 267).

41. The rejected claims cover, inter alia, a cosmetic and/or pharmaceutical composition comprising an ester formed by esterification of pentaerythritol with at least one C6-22 fatty acid, wherein said ester mixture contains less than 0.3% by weight of esters containing C17 fatty acid acyl groups and has a melting point of at least 30°C. Dependent claims 12-19 disclose additional components of the cosmetic or pharmaceutical composition. Dependent claim 20 further limits the cosmetic composition.

Applicant is reminded that during patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Claim terms are presumed to have the ordinary and customary meanings attributed to them by those

of ordinary skill in the art. *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). The phrase "contains less than" as applied to C17 fatty acid acyl groups has been interpreted to denote "0 up to 0.3%" C17 fatty acid acyl groups. This means that the ester mixture of claim 11 can be free of C17 fatty acid acyl groups. Further, the phrase "has a melting point of at least 30°C" as applied to the fatty acid ester mixture, has been interpreted to denote that this is the start temperature at which the fatty acid ester mixture may begin melting. (see *National Research Development Corporation v. Great Lakes Carbon Corporation, et al.*, 188 USPQ 327 (D. Del. 1975), 410 F. Supp 1108; "At least" one thousand degrees in claim means minimum temperature of one thousand degrees"). Thus, fatty acid ester mixture with a melting temperature above 30°C would fall within the scope of the claim. Furthermore, the phrase "at least one C6-22" has been interpreted to denote that the pentaerythritol ester mixture can be a monoester, diester, triester or tetraester or mixtures thereof; and one of the fatty acids esterified to produce the mixture is selected from the group of fatty acids with carbon atoms numbering from 6 to 22.

42. However, the Barth et al. reference teaches the mixed tetraester pentaerythritol triacetate monostearate with a melting point between 36 and 38°C. (see Table 1 the first compound). Barth does not specifically teach examples of the variety of claimed pentaerythritol ester mixtures, however, it teaches that fatty acids suitable for providing the long-chain fatty acid radicals for their invention are those fatty acids having 10 or

more carbons, i.e. palmitic (C16), stearic (C18), behenic (C22), arachidic (C20) etc. (see column 4, lines 17 – 26). Additionally, the mixed pentaerythritol esters produced by Barth are intended to have lubricating properties. (see column 3, lines 60 - 63 & 65 - 69). Further, Barth's process first uses esterification to produce partial esters of the pentaerythritol, then takes the partial esters and subject them to an additional esterification step to produce the tetraester. It is noted that Barth's process produces mixed esters of pentaerythritol because of the usefulness of their lubricating ability with plastics. (see column1, lines 8 – 11).

Also, because of the claim interpretations that were discussed by the Examiner above, Applicant's the claimed temperature for their pentaerythritol esters overlaps with that of Barth. Thus, based on the claims as broadly interpreted, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

43. The difference between Applicant's claimed process and Barth et al. is the following: there is no statement that the pentaerythritol esters produced by esterification can be included in a cosmetic and/or pharmaceutical composition; the cosmetic or pharmaceutical can have a wax component, a non ionic surfactant, and an oil component; the use of partial glycerides with the pentaerythritol ester in the cosmetic and/or pharmaceutical composition; and the pentaerythritol ester mixture containing monoesters, diesters and triesters in various ratios.

44. However with regard to the use of the fatty acid ester types taught by Barth in cosmetics or pharmaceutical compositions, based on the discussions in Memita et al.

and Scheuffgen, it would have been within the purview of one having ordinary skill in the art at the time of Applicant's claim process to recognize that fatty acid esters of pentaerythritol having lubricity properties in one field may be useful in other fields. Specifically, Memita et al. states that esters are used in a wide variety of fields such as cosmetics, pharmaceutical preparations, foods, electronics equipment, printing and lubricants (column 1, lines 13 – 16). Memita et al. states that there is no limitation regarding the kind of carboxylic acids that can be used to produce ester, wherein Memita prefers carboxylic acids having 5 to 30 carbon atoms. (see column 2, lines 47 – 50 & 61 – 64). Also, Memita's discloses a process that prepares partial and tetra esters of pentaerythritol with the carboxylic acids (fatty acids) that have C5 to C30 carbon atoms. (see column 3, line 32). Examples of the pentaerythritol esters of Memita et al. are set out in Examples 1 and 2.

Additionally, Scheuffgen took well known surface-active materials, i.e. di-fatty acid esters of pentaerythritol and used it in combination with other surface active materials derived from fatty products in a product to produce a lanolin substitute (see column 2, lines 12 – 22). The di-fatty acid of Scheuffgen is a di-coconut fatty acid ester of pentaerythritol (see column 2, line 35).

As such, based on the claim interpretation with regard to the types of fatty acids in the claimed pentaerythritol ester of Applicant's invention; the fatty acid component of the prior art pentaerythritol esters of Barth et al. encompasses the fatty acid content of Applicant's claimed mixture. Also, based on the discussion of Memita et al. and Scheuffgen the pentaerythritol triacetate monostearate ester of Barth or any of the

partial esters or tetra esters suggested by Barth would be useful in cosmetics or pharmaceuticals.

Furthermore, an example of a cosmetic having a pentaerythritol ester contained within the cosmetic composition and of the types suggested by Barth where the fatty acid acyl group is C20 to C24, and include a wax component, a non ionic surfactant, and an oil component can be found in the cosmetic products of Plough. The Plough reference discloses a long ware cosmetic that uses pentaerythritol tetra (C20-C24) aliphatic hydrocarbon carboxylate. (see page 1, paragraph 3). Also, the composition of Plough includes waxes (page 3, para. 3), cetyl alcohol (page 3, last line), sugroglycerides (see page 4, para. continued from page 3), oils (page 4, para. 1), and nonionic surfactants (page 5, para. 6). Applicant is directed to Examples I—VI.

45. With regard to the use of pentaerythritol esters of the types suggested by Barth in cosmetic compositions where the wax component is a C12-C24 partial glyceride, the Examiner turned to the teaching of Bauer et al. The Bauer et al. reference discloses a cosmetic or dermatological stick that includes pentaerythritol tetraisostearate and polyglyceryl-3 diisostearate along with other known additives useful in the cosmetic industry. Applicant is directed to the disclosure of Examples 93 and 96 on page 46.

Therefore, based on the teachings of Plough and Bauer et al., it would have been obvious to one having ordinary skill in the art at the time of Applicant's claimed invention to prepare cosmetic and/or pharmaceutical compositions that was comprised of an ester produced by esterification of pentaerythritol with a C6 – C22 fatty acid as disclosed by the teachings of Barth et al.; prepare cosmetic compositions with those esters and



include other components known to be useful in the cosmetic and/or pharmaceutical industry as suggested by Plough and Bauer et al. in the cosmetic composition.

46. With regard to the ester mixture used in the cosmetic and/or pharmaceutical composition containing monoesters, diesters and triesters; the Examiner turns to the teaching of Sakurai et al. The Sakurai et al. reference discloses a pentaerythritol ester from beef tallow fatty acid being 30% monoester, 35% diester and 35% triester which was used in a composition for use as rust-proof lubricant. (see column 7, Table 6). From the teaching of Kirk-Othmer it was known in the art at the time of Applicant's claimed process that beef tallow contained C10 – C20 fatty acids. (see Table 2). Also, it is stated in Sakurai et al. that partial esters of pentaerythritol of a fatty acid have melting points of less than 60°C. (see column 3, lines 26 – 27). The lubricating product of Sakurai et al. uses partial esters of the pentaerythritol which can easily be produced by well known esterification reactions with the pentaerythritol and fatty acid. (see column 3, lines 36 – 39). The Examiner directs Applicant to Barth et al. Example 1 (see column 4) which first prepared a partial ester of the pentaerythritol using a higher fatty acid via esterification. Also, column 4, lines 17 – 26 of Barth et al. discloses that C12 to C22 fatty acids, which are the type used by Sakurai et al., are useful for making their partial esters and tetra esters of pentaerythritol. As such, based on the teaching of Sakurai et al. and the esterification process of Barth et al., one of ordinary skill in the art at the time of Applicant's claimed invention could have easily produce partial ester of the type and ratio disclosed by Applicant's claimed invention. Thus, at the time of Applicant's claimed invention it was well known in the art that partial esters of

pentaerythritol having Applicant's claimed ratios could be produced from an esterification reaction with fatty acid as suggested by Barth in view of Sakurai et al.

According to Barth et al. and Sakurai et al. their ester products have lubricating properties, and Memita et al. discloses that esters produced from carboxylic acids having carbon atoms of C5 to C30 (fatty acid) with pentaerythritol are useful in a wide variety of fields such as cosmetics, pharmaceutical preparations, foods, electronics equipment, printing and lubricants (column 1, lines 13 – 16; column 2, lines 47 – 53 & column 3, line 32).

Further, based on the teaching of Barth et al., Sakurai et al., Memita et al. and Scheuffgen, one having ordinary skill in the art at the time of Applicant's claimed invention was made would have found it obvious to use esters of pentaerythritol produced by an esterification process in cosmetics of the type taught by Plough or Bauer et al. with a reasonable expectation of success; because the pentaerythritol esters of Barth et al. and Sakurai et al. have similar structural properties with the pentaerythritol esters that are used in the cosmetics of Plough or Bauer et al.

One having ordinary skill in the art at the time of Applicant's claimed invention would have been motivated produce a cosmetic and/or pharmaceutical composition comprising pentaerythritol fatty acid esters because the pentaerythritol esters of Barth et al. and Sakurai et al. share similar characteristics and properties with the pentaerythritol esters used in the cosmetic of Plough and Bauer et al. Evidence of any similar properties or evidence of any useful properties disclosed in the prior art that would be expected to be shared by the claimed invention weigh in favor or a conclusion that the

claimed invention would be obvious. (Dillion, 919 F2d at 697-98, 195 USPQ2d at 1905 (fed. Cir. 1990)).

Thus, in light of the forgoing discussion in paragraphs 38 - 43, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references of Barth et al., Memita et al., Scheuffgen, Plough, Inc., Bauer et al., Sakurai et al. (US 4,113,635) and Kirk-Othmer Barth, , it is apparent that one of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common senses.

47. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. (US 4,113,635) in view of Kirk-Othmer (Wiley-Interscience, 1993, vol. 10, 4<sup>th</sup> ed. page 267).

48. The rejected claim covers a fatty acid ester mixture of pentaerythritol, wherein the fatty acid contains 6 to 22 carbon atoms and is predominantly unbranched, and wherein said ester mixture contains less than 0.3% by weight of C17 fatty acid acyl groups, and has a melting point of at least 30°C. Dependent claim 24 further limits the fatty acids.

49. Applicant is reminded that during patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Claim terms

are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). The phrase "contains less than" as applied to C17 fatty acid acyl groups has been interpreted to denote "0 up to 0.3%" C17 fatty acid acyl groups. As such, since the claimed fatty acid ester of pentaerythritol can be free of C17 fatty acid-containing component the claim is anticipated by the reference. Further, the phrase "has a melting point of at least 30°C" as applied to the fatty acid ester mixture, has been interpreted to denote that this is the start temperature at which the fatty acid ester mixture may begin melting. (see *National Research Development Corporation v. Great Lakes Carbon Corporation, et al.*, 188 USPQ 327 (D. Del. 1975), 410 F.Supp 1108; "At least" one thousand degrees in claim means minimum temperature of one thousand degrees"). Thus, fatty acid ester mixture with a melting temperature above 30°C would fall within the scope of the claim.

50. Sakurai et al. discloses lubricant compositions of a solid film type, with partial esters of pentaerythritol with fatty acids as the chief constituents, rust-preventative, lubrication-improving agents, surface active agents, etc., having melting points of 30 to 60°C. (see column 1, lines 11-23). The fatty acids used to produce the corresponding partial esters by the reaction with pentaerythritol are from animal oil, vegetable oils, and straight chain fatty acids (unbranched) i.e. capric (C10), undecanoic (C11), lauric (C12), myristic (C14), palmitic (C16), stearic (C18) and olefinic fatty acids. (see column 3, lines

40-51). Also, it is stated that most of the partial esters of pentaerythritol of a fatty acid have melting points of less than 60°C. (see column 3, lines 26-27). Additionally, it is stated that the partial esters of a fatty acid alone may be used satisfactorily as a lubricant of the solid film type for the forming operation. (see column 3, lines 58 - 60). According to Table 1 the ester lubricant compositions of Sakurai et al., specifically mono, di and triester types are produced from stearic acid, coconut oil and beef tallow.

51. The difference between Sakurai et al. and Applicant claimed invention is as follows: requirement that the ester be predominantly unbranched and the ester being a mixture of C6 - C22 fatty acids.

52. However, with regard to the esters of Sakurai et al being predominantly unbranched, the Examiner notes that according to Table 1 of Sakurai et al. one of the esters produced is from coconut oil. According to the disclosure of Kirk-Othmer coconut oil is predominantly unbranched fatty acids of C6 - C18. As such, even though it is not specifically stated that the esters are predominantly unbranched, Sakurai et al. produces a mixed ester of pentaerythritol that contain fatty acid containing carbon atoms that overlap with Applicant's claimed fatty acid carbon atoms.

53. Also, with regard to the fatty acid ester mixture being a mixture of C6 to C22 fatty acids, based on the composition of the coconut oil, as set out in Kirk-Othmer, and used by Sakurai et al. the fatty acid ester mixture of the coconut oil in Table 1 would be a mixture of fatty acids, contain a fatty acid ester mixture of pentaerythritol with overlapping carbon atom amounts.

One having ordinary skill in the art at the time Applicant's invention was made when viewing the fatty acid ester of pentaerythritol of Sakurai et al., and based on the fact that Sakurai et al. teaches that partial esters of pentaerythritol with fatty acids from coconut oil, and partial esters have melting points of 30°C, would have a reasonable expectation that the Sakurai et al. partial esters would have the same characteristics as Applicant's claimed esters.

Thus, based on the above discussion in paragraphs 45 - 50, Sakurai et al teaches the elements of the claimed invention with sufficient guidance, particularity, and with a reasonable expectation of success, that the invention would be prima facie obvious to one of ordinary skill in the art. (see M.P.E.P. § 2143).

### ***Conclusion***

54. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YATE' K. CUTLIFF whose telephone number is (571)272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel M. Sullivan can be reached on (571) 272 - 0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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